



The Nature Conservancy in Minnesota,
South Dakota, and North Dakota
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January 22, 2019

RE: EL 18-053 Application of Deuel Harvest Wind Energy LLC

Dear South Dakota Public Utilities Commission:

We are writing in regard to the potential impact of wind turbine development on the remaining native prairie in Deuel County, South Dakota, including our 7-Mile Fen, Jacobsen Fen, and Altamont Prairie preserves. The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. We own and manage more than 17,000 acres in South Dakota. Our preserves are unique examples of native northern tallgrass prairie habitat which contains calcareous fens, native prairie and provides important wildlife habitat. The preserves provide refugia for native species that are specific to calcareous fens and habitat for other birds, insects, plants, and mammals. More specifically, the preserves and surrounding landscape are home to many declining grassland song birds, such as bobolink, western meadowlark, and grasshopper sparrow, as well as the iconic sharp-tailed grouse.

The Nature Conservancy is supportive of renewable energy, and wind power is an important source of renewable energy. However, the footprint of wind energy can be large, and we prefer to see the development of wind energy completed in a way that avoids and minimizes its impact to native ecosystems and their biodiversity. To that end, we strongly encourage tower development on previously disturbed lands and to buffer undisturbed grasslands by one mile. We recommend avoiding wind energy development on or near undisturbed grassland for the following four reasons.

First, developing wind turbines on undisturbed grassland, will contribute to a devastating trend in loss of undisturbed tallgrass prairie nationwide. Deuel County is part of a unique geologic formation in South Dakota called the Prairie Coteau, which is the last stronghold for Northern Tallgrass Prairie in the United States. Northern Tallgrass Prairie is more threatened and endangered than tropical rainforests. In Deuel County approximately 27% of the land area is still considered native or "undisturbed" tallgrass prairie, but nationwide less than 1% remains. Even with 27% undisturbed prairie, the majority of the land area in Deuel County has been previously disturbed, and a 2012 publication by Dr. Fargione¹ and his co-authors provides maps for siting wind energy development in areas with minimal disturbance to native prairie and prairie dependent wildlife. We would like to see the 27% of native prairie remain intact and buffered. We would be happy to provide a copy of Dr. Fargione's paper and maps to help guide development to areas that avoid

remnant prairie in the county. Invenergy has made efforts to reduce the direct impact of the wind turbines on undisturbed grassland, and we applaud that effort.

Second, large blocks of intact undisturbed grassland are important for grassland obligate birds. Fragmentation of the grassland with wind turbines will cause displacement for some declining species. Dr. Shaffer² with the U.S. Geological Survey published a study in 2015 demonstrating that seven grassland bird species displayed displacement effects from wind turbine development for up to 300 m from each turbine, and grasshopper sparrows, which have been declining sharply in the region, were particularly sensitive to development. Furthermore, prairie grouse have been shown to avoid areas with vertical structures, including energy development infrastructure. Both sharp-tailed grouse and greater prairie-chickens occur in Deuel County, and data³ suggest that wind turbines could impact prairie-chicken habitat use at distances up to 1.6 km (1 mi). Therefore, locating towers at least 1 mi from existing grassland would help minimize wind turbine impact on habitat use by grouse. Although many of the turbines are not sited directly on undisturbed grassland, many are within a 1 mi radius from undisturbed grassland. We appreciate Invenergy's efforts to reduce direct impacts, but we remain concerned about the indirect impacts of wind turbines in this landscape.

Third, we recently learned of an active bald eagle nest near Lake Alice, and turbines can have detrimental impacts on eagles. Eagles can collide with the structures, increased human disturbance can decrease nest success, and if the disturbance is serious enough, it can lead to the loss of the nesting territory⁴. The attached map shows the location of the currently active nest, but Lake Alice has a history of other active nests as well. The Environmental Constraints Map that Invenergy provided to the PUC does not show this nest, but it does appear to buffer other active nests by ~2 miles. We recommend extending the same buffer to this known and active nest.

Finally, the roads and paths that go to each turbine are corridors for invasive weeds⁵. Invasive species degrade the biodiversity of the native prairie and reduce the habitat quality for wildlife and livestock. Additionally, the establishment of invasive species in prairies and pastures would require spraying nonselective herbicides that would further decrease diversity on native/undisturbed sod. Reducing the amount of new road constructed and keeping construction out of undisturbed grasslands would minimize this risk.

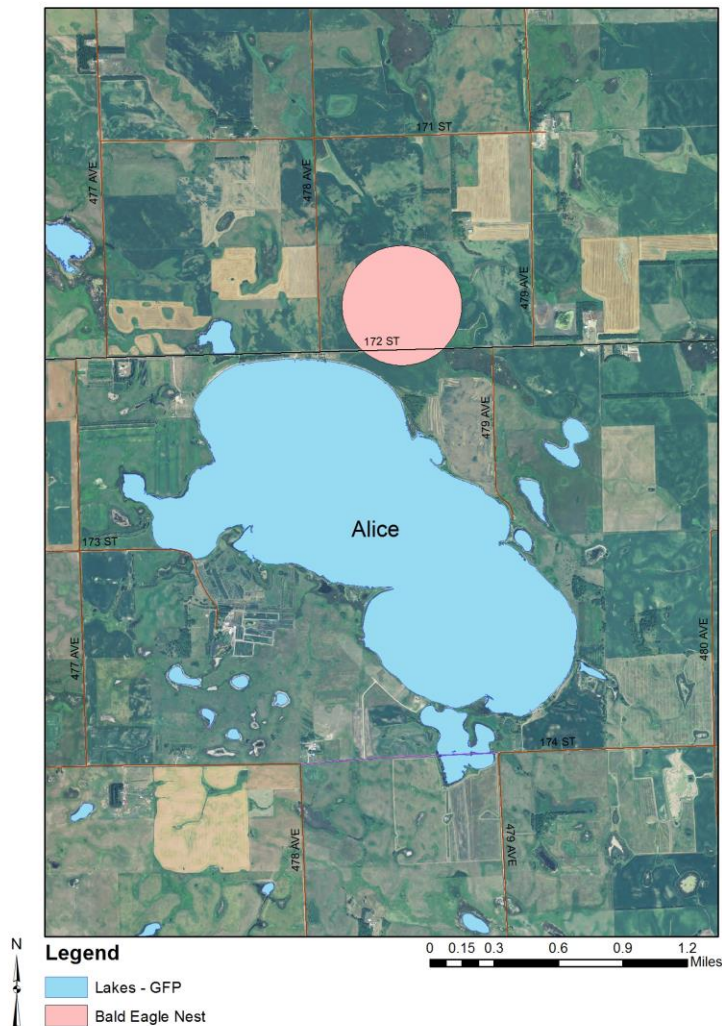
Please feel free to contact us with any questions or concerns, and thank you for your consideration in this process.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. T. Shaw', written in a cursive style.

Douglas T. Shaw, Ph.D.
Assistant Chapter Director

- ¹Fargione, J., J. M. Kiesecker, M. J. Slaats, and S. Olimb. 2012. Wind and wildlife in the northern Great Plains: identifying low-impact areas for wind development. PLOS ONE 7: e41468.
- ²Shaffer, J. A., and D. A. Buhl. 2015. Effects of wind-energy facilities on breeding grassland bird distributions. Conservation Biology 30:59-71.
- ³Arnett, E. B., D. B. Inkley, D. H. Johnson, R. P. Larkin, S. Manes, A. M. Manville, J. R. Mason, M. L. Morrison, M. D. Strickland, and R. Thresher. 2007. Impacts of wind energy facilities on wildlife and wildlife habitat. Wildlife Society Technical Review 07-2. The Wildlife Society, Bethesda, MD, USA.
- ⁴USFWS. 2013. Eagle Conservation Plan Guidance. <https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>
- ⁵Gelbard, J. L., and J. Belnap. 2003. Roads as conduits for exotic plant invasions in a semiarid landscape. Conservation Biology 17:420-432.



Map created on 1/9/2019 from the SD Natural Heritage Database, SDGFP, Wildlife Diversity Program